

AMENDMENTS TO THE SPECIFICATION

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Please replace existing abstract with the following.

A¹
A gradient sensitivity based method is described for reducing Peak to Average Power Ratio in multicarrier communication systems. The method involves definition of a differentiable penalty function which has non-zero values whenever there is a peak violation. The gradient of the function with respect to the symbol magnitudes and phases is evaluated at the given symbol vector. Symbol perturbations are computed in the opposite direction of the gradient in such a way that the peaks are reduced and the amount of errors introduced in the symbols is not large enough to affect the decoding process. In order to reduce computation, a variant of the method is proposed where a peak reduction kernel is precomputed and stored. The kernel is rotated to the location of the peak and added with proper sign to reduce PAR.

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Please replace lines 5-8 on page 7 of the specification as follows.

A²
The inputs to the peak detector are N samples of the IFFT. The peak detector uses a predesignated threshold T . The value of the threshold and the magnitude distribution of the samples together determine the probability of the number of samples whose magnitude exceeds the threshold. Thus the predesignated threshold T can be selected to control the number of samples violating the threshold. Each IFFT sample is compared with the threshold and the indices of samples whose magnitude exceeds the threshold are stored along with the amount by which they violate the threshold. This forms the input to the symbol modifier block.